

A. Allowable Subject Matter

In the office action, the Examiner indicates that claims 13 to 23 are allowed. Applicants thank the Examiner for a thorough examination of the claims.

B. Rejections Under 35 U.S.C. § 103(a)

Claims 1 to 12 are rejected as being unpatentable over U.S. Patent No. 6,491,208 ("James") in view of U.S. Patent No. 6,049,978 ("Arnold"). These rejections are respectfully traversed.

Claim 1 recites the step of performing post-spray processes on a turbine component at raised temperatures, after performing a cold gas-dynamic spraying process on the component. The post-spray processing encompasses several high temperature treatments such as vacuum sintering, hot isostatic pressing, and one or more thermal treatments.

Although high temperature post-spray treatments have been incorporated into some thermal spraying and high temperature coating processes, such high temperature post-spray treatments are new to cold gas dynamic spraying technology, as evidenced by James. James discloses cold gas-dynamic spraying generally, but there is no teaching or suggestion of any need for high temperature treatments after the cold gas-dynamic spraying process is complete. A person of ordinary skill in the art of cold gas-dynamic spraying would never realize a need to follow a cold gas-dynamic spraying process with post-spray thermal treatments from reviewing James alone.

Upon finding James entirely void of a teaching or suggestion of any post-spray thermal treatments, a person of ordinary skill in the art would not recognize a problem that is solvable using post-spray thermal treatments. Stated differently, since James teaches the advantages of a cold gas-dynamic spraying process, there is no reason that a person of ordinary skill in the art would investigate any type of post-spray thermal processes. The only document of record that recites a need for post-spray thermal processes after completing a cold gas-dynamic spraying process is the present application, and it is well recognized that "it is impermissible to use the

claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." In re Fritch, 972 F.2d 1260, 23 U.S.P.Q.2d 1780.

After finding no reason to modify James from reading James alone, a person of ordinary skill in the art of cold gas-dynamic spraying would not deem Arnold sufficiently pertinent to cold gas-dynamic spraying to provide any meaningful guidance for modifying the James process. Unlike the thermal spraying treatments disclosed by Arnold, cold gas-dynamic spraying is performed at a temperature that is well below the melting point for the powdered material being sprayed. A coating is formed by the impact and kinetic energy of the powder particles, which in turn cause the particles to undergo high-speed plastic deformation and to bond to the surface on which the particles are sprayed. Arnold fails to introduce post-spray thermal treatments to the art of cold gas-dynamic spraying processes. Rather, Arnold merely teaches that such thermal treatments are necessary after thermal coating or spraying processes. Although Arnold discloses vacuum sintering (col. 16, lines 62 to 65) and hot isostatic pressing (col. 20, lines 28 to 37), these steps follow a thermal coating process called hyper velocity oxyfuel (HVOF) plasma thermal spraying. It is therefore clear that Arnold fails to provide any teaching or suggestion that post-spray thermal treatments should follow a cold gas-dynamic spraying process.

The final Office Action includes the assertion by the Examiner that Arnold and James, despite their differences, would constitute analogous art since "both are concerned with repairing coatings on turbine lades (sic) and both use spraying for the application of the repair material." Even though it is agreed that both references mention processes for repairing turbine blades, there are many different process that are related to this type of repair. Further, within the broad category of repair processes there are many different spraying techniques for applying repair materials to turbine blades. Some of these techniques, including the HVOF process disclosed by Arnold, are categorized with other thermal spraying processes. The cold gas-dynamic spraying processes disclosed by James and by the present application are not categorized as thermal spraying processes. As mentioned previously, a person of ordinary skill in the art would not find motivation from reviewing the thermal spraying processes of Arnold to

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modify the cold gas-dynamic spraying technique disclosed by James, and consequently would not arrive at the presently claimed invention. For at least these reasons, it is respectfully requested that the rejections of claim 1, and all claims depending from claim 1, should be withdrawn.

#### F. Conclusion

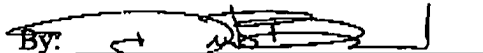
In view of Applicant's remarks, it is respectfully submitted that Examiner's rejections have been overcome. Accordingly, Applicants respectfully submit that the application is now in condition for allowance, and such allowance is therefore earnestly requested. Should the Examiner have any questions or wish to further discuss this application, Applicants request that the Examiner contact the Applicants attorneys at the below-listed telephone number.

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

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